Announcement and Call for Papers

International Conference on Smart Machining Systems

National Institute of Standards and Technology (NIST)
Gaithersburg, Maryland USA

March 13-15, 2007

With the additional sponsorship of:

Key Dates

Abstracts due:	July 31st, 2006
Notification of acceptance of abstracts:	August 31st, 2006
Full paper due:	**November 30th, 2006**
Notification of acceptance:	January 15th 2007
Camera-ready papers due:	February 15th 2007

Abstracts

Abstracts should be 1 page maximum in length, including name, affiliation, title, keywords, and conference topic area following the format given on the conference web site.

Full paper

A template for submission will be accessible on the conference website. All papers will be peer reviewed by the program committee and they will be either accepted (with the possibility of minor corrections) or rejected. The language of the paper and the conference is English.

Conference publication

The final abstracts will be printed in a booklet for distribution to delegates of the conference. Full papers will be published electronically on CD ROM. Selected papers will be published in a special issue of the CIRP Journal of Manufacturing Systems.

International Program Committee

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Invitation

We are pleased to announce the first International Conference on Smart Machining Systems to be held at the National Institute of Standards and Technology (NIST) in Gaithersburg, MD, USA on March 13-15, 2007. The primary objective of the conference is to bring together experts from both industry and academia to share and discuss the latest advances toward integrated Smart Machining Systems (SMS) technologies and to encourage cooperative efforts in this field.

Conference objective

Present recent advances toward integrated Smart Machining Systems (SMS) technologies.

Smart Machining Systems (SMS)

Smart Machining Systems, SMS, are the next stage in the evolution of machining systems within the manufacturing enterprise. A Smart Machining System will enable cost effective manufacture of first and every subsequent part to specification and on schedule. Such a system will complement and enhance the effectiveness of machine operators, process planners and design engineers in the manufacturing enterprise by sharing the knowledge and information among these functions to optimize the design and manufacturing processes to their fullest. This is an emerging and evolving field of research in industry and academia with a continued strong impact on industry practice, and necessary metrology and standards. This international conference will bring together researchers, developers, and users of technologies that are essential component of SMS and challenge them to explore the integration of these technologies.

Conference topics

The program will consist of presentations on all aspects of SMS technologies, including but not limited to:

- Smart machine tool components such as spindles, drive systems, tooling, controls;
- Machine tool and process condition monitoring;
- Machine tool performance characterization and tracking;
- Predictive tolerance analysis and control;
- Process quality control and improvement;
- Robust optimization and other mathematical modeling tools for machining environments with high levels of uncertainty;
- Process modeling including Modeling of the tool-material–work-material interaction including Finite Element Modeling (FEM), measurement of material properties at high strain rates, cutting modeling, thermal modeling at the tool-chip interface and others;
- Modeling of the machine tool system including high speed machining, simulation of machined surface, machine tool dynamics;
- Data standardization and requirements for CNC;
- Use of knowledge and information modeling for SMS (data representation, ontologies, XML, OWL, software application, study case);
- Concurrent engineering approaches for SMS integration into earlier stages of the product life cycle across a company as well as within an extended enterprise;
- Virtual machining and its integration in the manufacturing enterprise.

There is a great deal of difficulty integrating all these aspects together into a well-structured and functional system. Developing such a system requires coordinated activities across disparate engineering domains that will be outlined by this conference.

Information is available on the conference web site: *http://www.mel.nist.gov/sms*

For additional information please contact:
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Organizing committee

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